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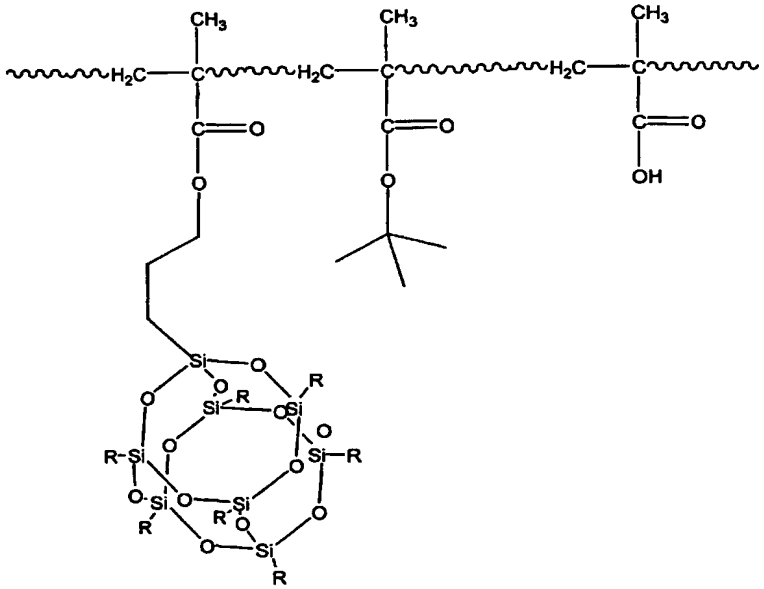
(54) Title: LITHOGRAPHIC MATERIALS BASED ON POLYMERS CONTAINING POLYHEDRAL OLIGOMERIC SILSESQUIOXANES



(57) Abstract: Materials are described suitable for optical lithography in the ultraviolet region (including 157 nm and extreme ultraviolet region), and for electron beam lithography. These materials are based on new homopolymers and copolymers, they are characterized by the presence of polyhedral oligomeric silsesquioxanes in their molecule, and they are suitable for single as well as bilayer lithography. Ethyl, or similar or smaller size, groups are used as alkyl substituents of the silsesquioxanes in order to reduce problems related to pattern transfer, roughness, and high absorbance at 157 nm (such problems occur when the substituents are large alkyl groups such as cyclopentyl groups).

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